

AMENDMENTS TO THE CLAIMS

1. (Original) A light modulator, comprising:
an array comprising rows and columns of interferometric display elements, each element being divided into sub-rows of one or more sub-elements;
array connection lines to transmit operating signals to the display elements, wherein one connection line corresponds to one row of display elements in the array;
sub-array connection lines electrically connected to each array connection line;
and
switches to transmit the operating signals from each array connection line to the sub-rows to effect image data modulation.
2. (Original) The light modulator of claim 1, multiple sub-elements further comprising a sub-element in each row for red, green and blue..
3. (Original) The light modulator of claim 1, column connection lines further comprising three column connection lines, one each for red, green and blue sub-elements in each element.
4. (Original) The light modulator of claim 1, the switches comprising microelectromechanical switches.
5. (Original) The light modulator of claim 1, the switches further comprising switches of a similar configuration as the interferometric display elements.
6. (Original) The light modulator of claim 1, the switches further comprising the sub-elements such that when a selected sub-element is deflected, the selected sub element causes the operating signal from the array connection line to transfer from the selected sub-element to an adjacent sub-element.
7. (Original) The light modulator of claim 1, the switches further comprising semiconductor transistor switches
8. (Original) A method of manufacturing an interferometric light modulator, the method comprising:

providing an array of interferometric display elements arranged in rows and columns, each display element comprising:

a predetermined number of sub-rows of sub-elements, wherein the predetermined number of sub-rows depends upon a desired bit-depth for a display; and

a predetermined number of sub-columns within each sub-row, wherein the predetermined number of sub-columns corresponds to a desired number of colors for the display;

arranging array connection lines for each row, such that each connection line corresponds to one row of the array; and

providing electrical connection between the array connection line for each row to one of the sub-rows of the corresponding row of the array.

9. (Original) The method of claim 8, arranging array connection lines for each row further comprising arranging array connection lines between the array and a driver device.

10. (Original) The method of claim 8, providing electrical connection between the array connection line further comprising providing connection to a set of microelectromechanical switches.

11. (Original) The method of claim 8, providing electrical connection between the array connection line further comprising providing connection to a set of semiconductor switches.

12. (Original) The method of claim 10, the microelectromechanical switches further comprising switches of a similar configuration as the interferometric display elements.

13. (Original) The method of claim 8, providing electrical connection further comprising deflecting a sub-element of a sub-row, thereby forming a connection between the sub-element and an adjacent sub-element.

14. (Currently amended) A light modulator, comprising:

an array of interferometric display elements arranged in rows and columns, each element comprising a predetermined number of sub-elements, wherein the number of sub-elements is determined by a desired bit depth and each element is approximately the same size; and

~~electrical connections between the sub-elements such that the electrical connection is forms a sub-element cascade; and~~

an array connection line corresponding to each row of display elements, wherein each array connection line is electrically connected to a sub-element in each display element;

wherein at least one sub-element is configured to selectively form an electrical connection connecting said array connection line to at least one other sub-element.

15. (Previously presented) ~~The light modulator of claim 14, further comprising a predetermined number of sub-element cascades within each display element, wherein the predetermined number is a desired number of colors.~~ A light modulator, comprising:

an array of interferometric display elements arranged in rows and columns, each element comprising a predetermined number of sub-elements, wherein the number of sub-elements is determined by a desired bit depth and each element is approximately the same size;

electrical connections between the sub-elements such that the electrical connections form a sub-element cascade; and

an array connection line corresponding to each row of display elements, wherein each array connection line is electrically connected to a sub-element in each display element;

wherein each element comprises a predetermined number of sub-elements, and the predetermined number corresponds to the number of colors in the element.

16. (Previously presented) ~~The light modulator of claim 14, further comprising A~~ light modulator, comprising:

an array of interferometric display elements arranged in rows and columns, each element comprising a predetermined number of sub-elements, wherein the number of sub-elements is determined by a desired bit depth and each element is approximately the same size;

electrical connections between the sub-elements such that the electrical connections form a sub-element cascade;

an array connection line corresponding to each row of display elements, wherein each array connection line is electrically connected to a sub-element in each display element; and

addressing circuitry to provide an addressing pulse to each sub-element cascade, wherein a number of sub-elements in the cascade that become active depends upon a length of the addressing pulse.

17. (Currently amended) A method of manufacturing a light modulator, comprising:

providing an array of interferometric display elements arranged in rows and columns, each element comprising at least one sub-element cascade of a predetermined number of sub-elements, such that at least one sub-element is configured to selectively form an electrical connection connecting said array connection line to at least one other sub-element; and

electrically connecting a first element in each sub-element cascade in a row to a corresponding connection line for that row;

~~18. The method of claim 17, the method further comprising providing an array of interferometric elements having at least one sub-element cascade further comprises providing a sub-element cascade for each desired color~~ A method of manufacturing a light modulator, comprising:

providing an array of interferometric display elements arranged in rows and columns, each element comprising at least one sub-element cascade for each color comprising a predetermined number of sub-elements;

electrically connecting a first element in each sub-element cascade in a row to a corresponding connection line for that row; and

providing an array of interferometric elements having at least one sub-element cascade further comprising providing a sub-element cascade for each desired color.

19. (Previously presented) The method of claim 17, further comprising electrically connecting the connection lines for each row to a driver device.

20. (Currently amended) A light modulator, comprising:

an array of interferometric elements, each element comprising a pre-determined number of sub-elements, each sub-element comprising a single movable layer having a surface area, wherein the surface area corresponds~~wherein one or more of the sub-elements are of a different size corresponding~~ to a different binary weight of display information, and wherein the number of sub-elements depends upon a desired bit depth.

21. (Currently amended) The light modulator of claim 20, ~~the pre-determined number of sub-elements further comprising~~ wherein at least one interferometric element comprises four sub-elements, a first sub-element of ~~half-size~~ a size approximately one half the size of said at least one element, a second sub-element of ~~quarter-size~~ a size approximately one fourth the size of said at least one element and third sub element of ~~eighth-size~~ a size approximately one eighth the size of said at least one element and a fourth sub-element of ~~sixteenth-size~~ a size approximately one sixteenth the size of said at least one element.

22. (Previously presented) The light modulator of claim 20, further comprising a connection line for each of the sub-elements.

23. (Previously presented) ~~The light modulator of claim 20, further comprising~~ A light modulator, comprising:

an array of interferometric elements, each element comprising a pre-determined number of sub-elements, wherein one or more of the sub-elements are of a different size corresponding to a different binary weight of display information, wherein the number of sub-elements depends upon a desired bit depth; and

one connection line for each display element, and a set of switches electrically connected between the display element and the sub-elements, wherein the light modulator is configured such that sub-elements needed to create a weighting of a pixel are activated in accordance with display information.

24. (Currently amended) A method of manufacturing a light modulator, the method comprising:

providing an array of interferometric display elements;

forming sub-elements within each display element of a size approximately equal to one half a the display element; and

forming additional sub-elements as desired, each additional sub-element having a movable layer having a surface area size approximately equal to half the surface areaisize of a next largest movable layer of another sub-elementelement.

25. (Previously presented) The method of claim 24, further comprising forming a connection line for each sub-element.

26. (Previously presented) The method of claim 24, further comprising forming a connection line for each display element and providing multiplexing switches in electrical connection between the connection line and the sub-elements.

27-31. (Canceled)

32. (New) The light modulator of Claim 20, wherein the movable layer comprises a mirror.

33. (New) The method of Claim 24, wherein the movable layer comprises a mirror.